DATA EVALUATION RECORD

1. Chemical: Dicyandiamide

2. Test Material: Dicyandiamide, white powder designated HLA No. 41103598 by the testing laboratory. Sponsor assumed responsibility for stability and purity of test material. A June 6, 1986 supplement to registration package identifies the compound as SKW 8510 NS, technical grade.

3. Test Type: Avian Dietary LC_{50} Mallard Duck

4. Study ID: Avian Dietary LC_{50} Mallard Duck (Anas platyrhynchos). Study No. 6026-454, For: SKW Trostberg AG, Trostberg, Germany, By: Hazleton Laboratories America, Inc. Chemical & BioMedical Sciences Division, 3301 Kinsman Boulevard, Madison, Wisconsin 53704. May 24, 1985.

5. Reviewed by: Zigfridas Vaituzis
Microbiologist
EEB/HED
Signature: Z. Vaituzis
Date: 10/17/86

6. Approved by: Ray Matheny
Head, Section I
EEB/HED
Signature: Ray Matheny
Date: 2/13/87

7. Conclusions:

The dietary LC_{50} to mallard ducks was found to be greater than 5000 ppm, the highest dose tested. No detectable toxic signs or abnormal development or feeding were observed during the 8-day test period. Dicyandiamide is practically nontoxic to mallard ducks.

The study fulfills the Guidelines requirement for an Avian Dietary LC_{50} on waterfowl.

8. Recommendations:

N/A.

9. Background:

N/A.

10. Discussion of Individual Tests:

N/A.

11. Methods and Materials:

a. Test Organisms: Mallard duck (Anas platyrhynchos)

Age/Stage of Maturity: Birds were 10 days old when placed on test.

Body Weights: 136-144 grams

Sex: Not given

Source: Whistling Wings, Hanover, Illinois.

b. Dosage Form: Dry powder mixed with bird diet (dry)

Solvents/Vehicles: None used.

Route of administration: Test material was administered in the duck's diet.

c. Referenced Protocol: EPA Pesticide Assessment Guidelines, Subdivision E, Hazard Evaluation: Wildlife and Aquatic Organisms (October 1982), Section 71-2 Avian Dietary LC_{50} Test.

OECD Guidelines for Testing of Chemicals, "Avian Dietary Toxicity Test," Section 205, adapted April 4, 1984.

Test Levels: 1250, 2500 and 5000 ppm of bird chow.

Dose Spacing Factor: test material offered ad libitum in diet for 5 days.

Number per level: 5 per pen during test period.

Holding/Acclimation: 9-day holding/acclimation period.

Pen/Cage Facilities: Subjects were housed in 51 cm x 84 cm x 25 cm battery cages with wire mesh floors and outside walls. Partitions lined with galvanized iron.

Feeding: Treated diets fed for 5 consecutive days, followed by a 3-day feeding of untreated basal diet. Feed was provided ad libitum.

Physical condition: Considered acceptable for testing.

Test Conditions:

Temperature: 23° to 29 °C

Humidity: Ambient (39% to 55%)

Photoperiod: A light cycle at 12 hours light/12 hours dark was maintained.

Diet Preparation: Purina Broiler Chowder (Lot No. 4743251) mixed with ground corn in proportions of 35 percent chowder/65 percent corn.

Controls: 10 birds (2 groups of 5 randomized by weight) without test material in diet.

Measured Test Levels: 100 g samples at each test diet were taken at time of preparation and forwarded to HLA in Vienna, Virginia, for chemical analysis of dicyandiamide content.

The results of the diet analysis for dicyandiamide were as follows:

Diet Number	Dicyandiamide (ppm) Added	Found*
11	5000	5336
10	2500	2572
9	1250	1218

* Average of two asays

Observation Period: Daily observations for 8 days.

Statistical Methods: No statistical analyses were conducted because there was no mortality or toxicity.

12. Reported Results:

Effects Criteria: pharmacotoxic signs, mortality.

LC_{50}: The dietary LC_{50} is in excess of 5000 ppm.

NEL: > 5000 ppm

Observation Period: 8 days

Food Consumption: Recorded daily for 8 days.

Body Weight Changes: Comparable to control groups, or better.

Toxic Symptoms: No signs of toxicity, death, or abnormal behavior were observed.

Necropsy Results: No mortalities; not performed.

13. Study Author's Conclusions/Quality Assurance Measures:

The test material, dicyandiamide, was evaluated for dietary LC_{50} toxicity in mallard ducks. Based on the results obtained, the dietary LC_{50} for this test material is in excess of 5000 ppm.

Body weight gains of the treated groups were normal during the 5-day treatment period and the last 3 post-treatment days at the study. Feed consumption was not affected. No toxicity was noted.

A signed and dated quality assurance statement is attached to the study.

14. Reviewer's Discussion and Interpretation of the Study:

a. Test Procedures: The procedures are in accordance with protocols recommended by the Guidelines. There are no problems noted with the test methods with the following exception. The chemical dicyandiamide dry powder was mixed with bird chow apparently in a dry state. No mention is made of a liquid vehicle as recommended by the Guidelines.

As a substitute for liquid vehicle, the Guidelines recommend measurement at test chemical levels in the test diet preparation. The registrant has provided measured test levels. These are in the acceptable range.

b. Statistical Analysis: No statistical analysis is necessary since no mortalities or other symptoms of toxicity were observed.

c. Discussion/Results: An avian dietary LC_{50} using mallard ducks was performed. The LC_{50} was found to be greater than 5000 ppm, the highest dose tested. No detectable toxic signs or abnormal development or feeding were observed during the 8-day observation period. Dicyandiamide is practically nontoxic to mallard ducks.

d. Adequacy of Test:

1. Validation: Core for technical grade dicyandiamide

2. Rationale: Fulfills Guideline requirements.

3. Reparability: N/A.

15. Completion of One-Liner for Test: October 20, 1986.

16. CBI Appendix: N/A.